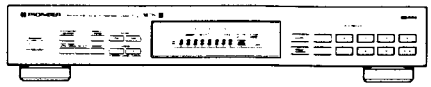
PIONEER
The Art of Entertainment

Service Manual



ORDER NO.
ARP2864

FM/AM DIGITAL-SYNTHESIZER TUNER

F-203RDS

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model	Power Requirement	The voltage can be converted by the following method.
	F-203RDS		
HEXK	○	AC220—230V	AC240V, ✱
HBXK	○	AC240V	AC220—230V, ✱
HEWZXK	○	AC220—230V	AC240V, ✱
HEWIXK	○	AC220—230V	AC240V, ✱

✱ : Alter the wiring of the Power-supply block at the primary winding of Power-transformer referring to the "Line Voltage Selection" described in Service Manual.

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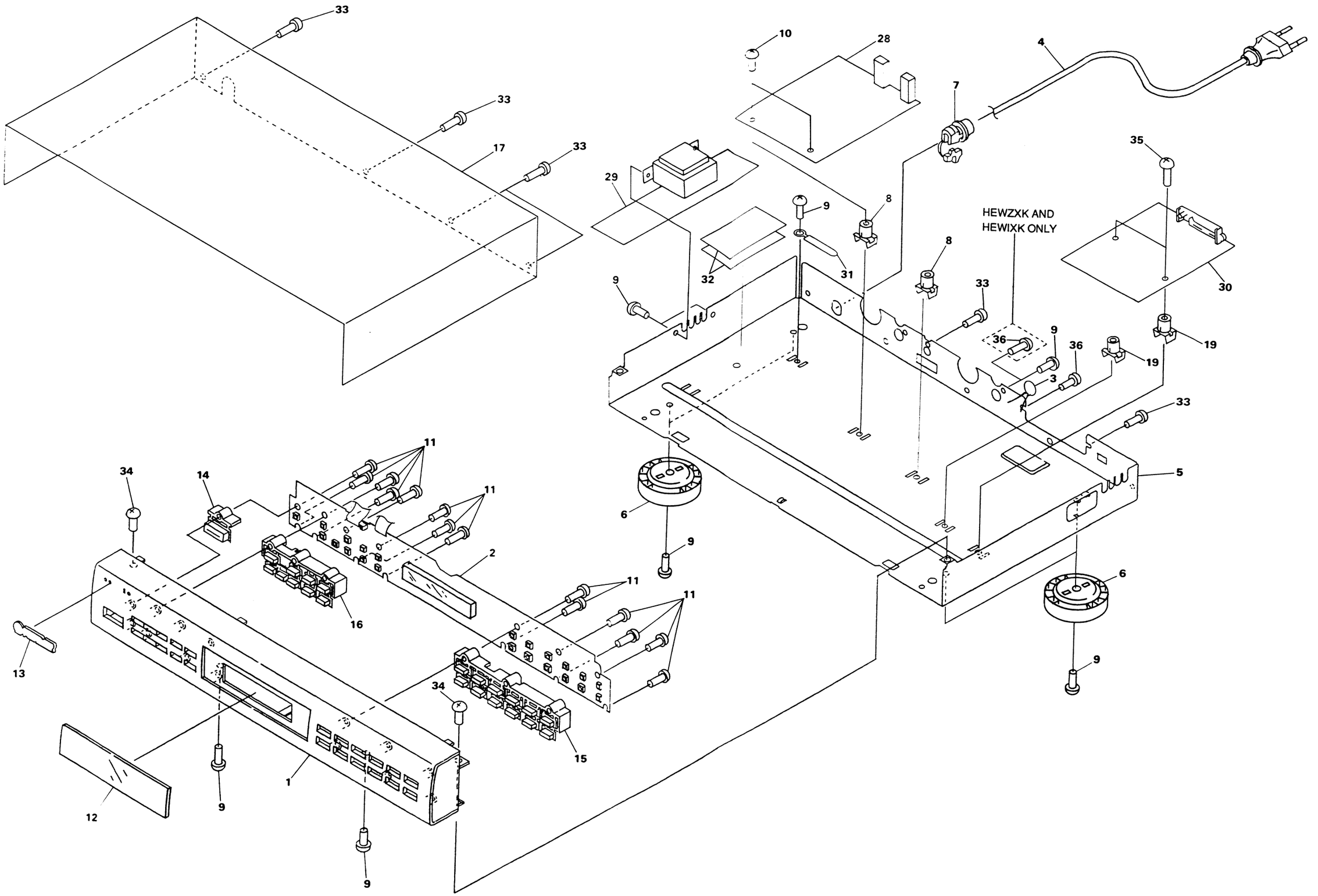
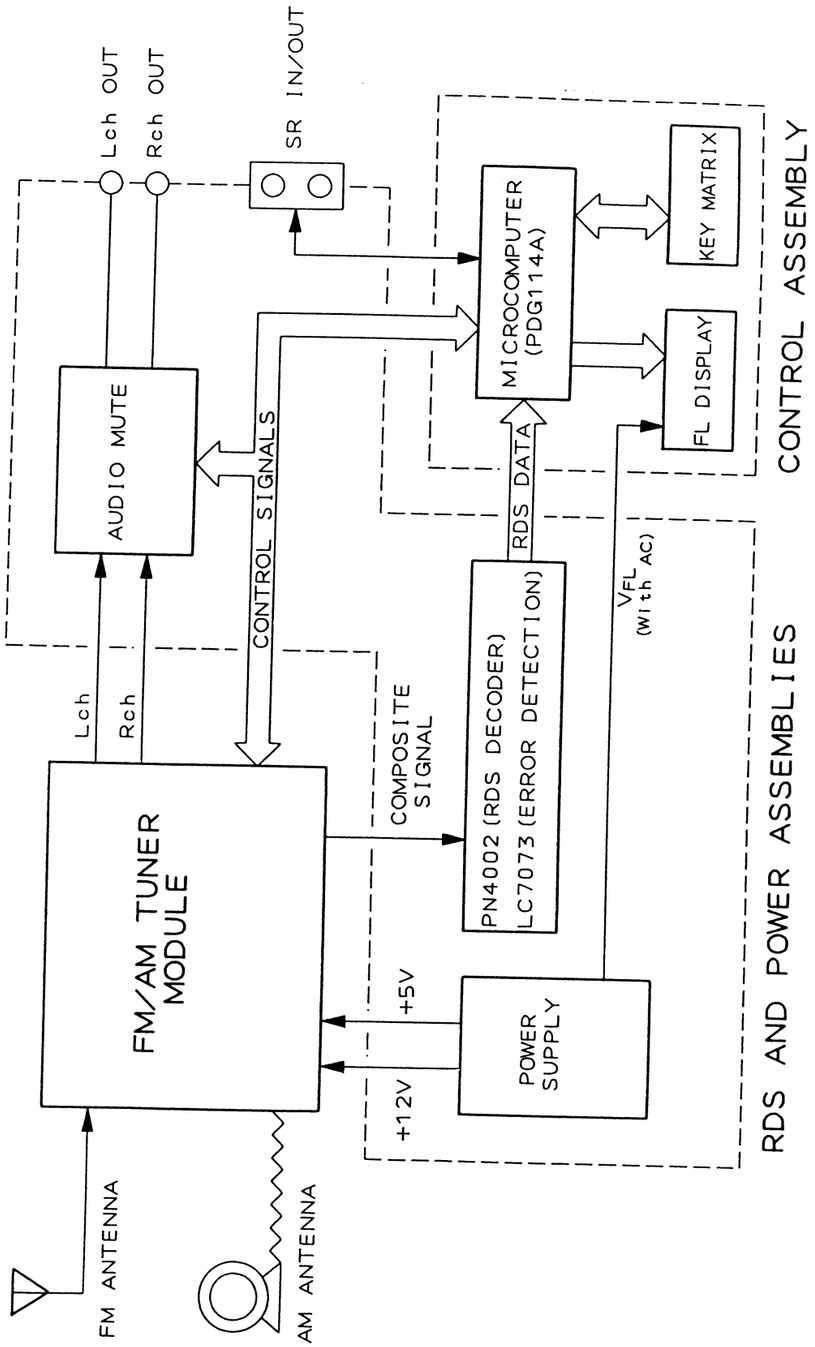
O-FFO MAY. 1994 Printed in Japan



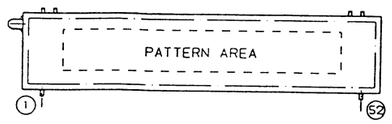
NOTE: Screws adjacent to ▼ mark on product are used for disassembly.

2. BLOCK DIAGRAM



3. FL INFORMATION

PIN LOCATION

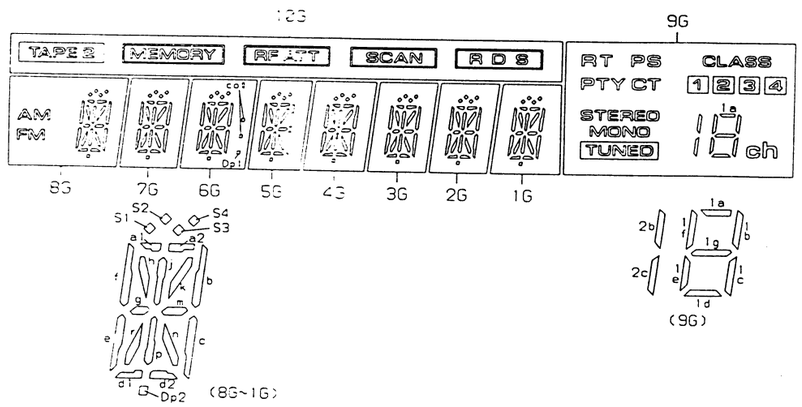


PIN CONNECTION

PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
CONNECTION	F1	F2	NP	9G	8G	7G	6G	5G	4G	3G	2G	1G	NP	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX	DL	NP	NP	F1	F2

NOTE 1) F1,F2 --- Filament
2) NP ------ No pin
3) NX ------ No extend pin
4) DL ------ Datum Line
5) 1G~10G --- Grid

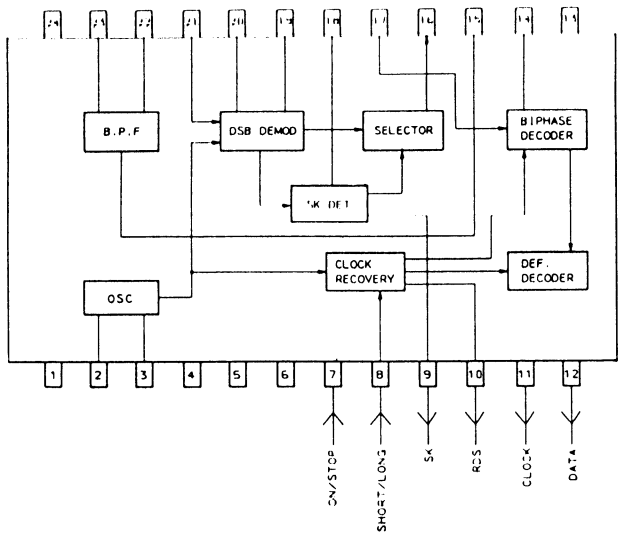
GRID ASSIGNMENT



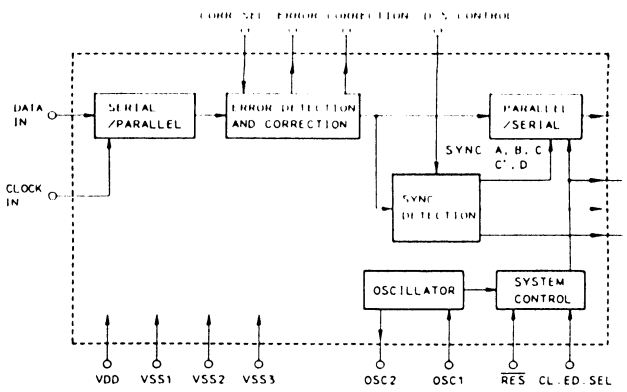
ANODE CONNECTION

	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	-	TUNED	S1	S1	S1	S1	S1	S1	S1	S1
P2	-	STEREO	S2	S2	S2	S2	S2	S2	S2	S2
P3	-	2	S4	S4	S4	S4	S4	S4	S4	S4
P4	-	3	S3	S3	S3	S3	S3	S3	S3	S3
P5	MEMORY	MONO	a1	a1	a1	a1	a1	a1	a1	a1
P6	RF ATT	4	a2	a2	a2	a2	a2	a2	a2	a2
P7	-	CLASS	h	h	h	h	h	h	h	h
P8	-	1	j	j	j	j	j	j	j	j
P9	TAPE 2	2b	b	b	b	b	b	b	b	b
P10	-	RT	k	k	k	k	k	k	k	k
P11	-	1a	g	g	g	g	g	g	g	g
P12	-	1b	f	f	f	f	f	f	f	f
P13	-	2c	m	m	m	m	m	m	m	m
P14	SCAN	CT	c	c	c	c	c	c	c	c
P15	-	PTY	p	p	p	p	p	p	p	p
P16	-	PS	r	r	r	r	r	r	r	r
P17	-	1g	n	n	n	n	n	n	n	n
P18	-	1e	d1	d1	d1	d1	d1	d1	d1	d1
P19	-	1c	e	e	e	e	e	e	e	e
P20	RDS	1d	d2	d2	d2	d2	d2	d2	d2	d2
P21	-	1f	Dp2	Dp2	Dp2	Dp2	Dp2	Dp2	Dp2	Dp2
P22	-	ch	AM	-	colon	-	-	-	-	-
P23	-	-	FM	-	Dp1	-	-	-	-	-

IC301 (PM4002B)



IC302 (LC7073)



RDS ASSY (AWZ5313 : HEXK AND HBXK TYPES)
(AWZ5315 : HEWIXK TYPE)
(AWZ5314 : HEWZXK TYPE)

FM/AM TUNER MODULE
(AXQ3225 : HEXK AND HBXK TYPES) (→SCH-2)
(AXQ3226 : HEWIXK AND HEWZXK TYPES) (→SCH-3)

J203 — AK11086 CN203

RDS, LOCAL, CE, DA, CL, R CH, GND, L CH, MONO, MUTE, TUNE, +12V, +5V, STEREO

R337 1.0k

D301, D302

Q305 : +5V SW (2SA933S)

Q308 : BUFFER (2SC2668)

Q307 : +5V SW DRIVER (2SC1740S)

Q306 : MUTE (2SC1740S)

IC301 : RDS DATA DECODER (PM4002B)

IC302 : ERROR DETECTION and CORRECTION (LC7073)

X302 AS31061 22p

X301 AS31025

RDS ADJ TP203

D201, D204, D301–D303 : 1SS252

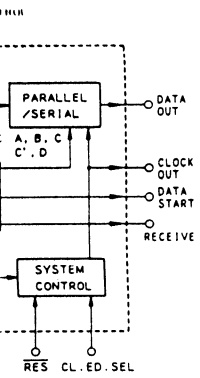
KPE11 CN201 — POWER, MUTE, RDS RECEIVE, STEREO, TUNE, MONO, RF ATT, FM, RDS RES, RDS DS, REM CON

TO CONTROL ASSY CN402 (→SCH-4)

CN202 KPE13 — RDS DATA, GND, PLL CE, PLL CK, PLL DATA, RDS OUT, INT(AC), RDS CK, +5.6V, +5V, -30V

TO CONTROL ASSY CN40

SCH-1 RDS ASSY, POWER ASSY



NOTE FOR SCHEMATIC DIAGRAMS (Type 3A)

1. **When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".**
2. **Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.**
3. **RESISTORS:**
   Unit: k:kΩ, M:MΩ, or Ω unless otherwise noted.
   Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.
   Tolerance: (F): ±1%, (G): ±2%, (K): ±10%, (M): ±20% or ±5% unless otherwise noted.
4. **CAPACITORS:**
   Unit: p:pF or μF unless otherwise noted.
   Ratings: capacitor (μF)/ voltage (V) unless otherwise noted.
   Rated voltage: 50V except for electrolytic capacitors.
5. **COILS:**
   Unit: m:mH or μH unless otherwise noted.
6. **VOLTAGE AND CURRENT:**
   mV : Signal voltage at FM 1kHz, 100% MOD.
   or ← V :
   DC voltage (V) at no input signal unless otherwise noted.
   Value in ( ) is DC voltage at rated power.
   ⇦ mA or ← mA :
   DC current at no input signal unless otherwise noted.
7. **OTHERS:**
   - ⊘ or ⊘ : Adjusting point.
   - ◄ : Measurement point.
   - The ⚠ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
8. **SCH-□ ON THE SCHEMATIC DIAGRAM:**
   - SCH-□ indicates the drawing number of the schematic diagram. (SCH stands for schematic diagram.)
9. **SWITCHES** (Underline indicates switch position):

CONTROL ASSY

S401 : POWER(STANDBY/ON)	S412 : 3
S402 : AM	S413 : 2
S403 : FM	S414 : 1
S404 : DISPLAY MODE	S415 : 6
S405 : CHARACTER/SEARCH	S416 : 7
S406 : MPX MODE(AUTO/MONO)	S417 : 8
S407 : MEMORY	S418 : 9
S408 : —(down)	S419 : 10
S409 : +(up)	S420 : DIRECT ACCESS
S410 : 5	S421 : CLASS
S411 : 4	S422 : RF ATT

⇨ : FM Signal route

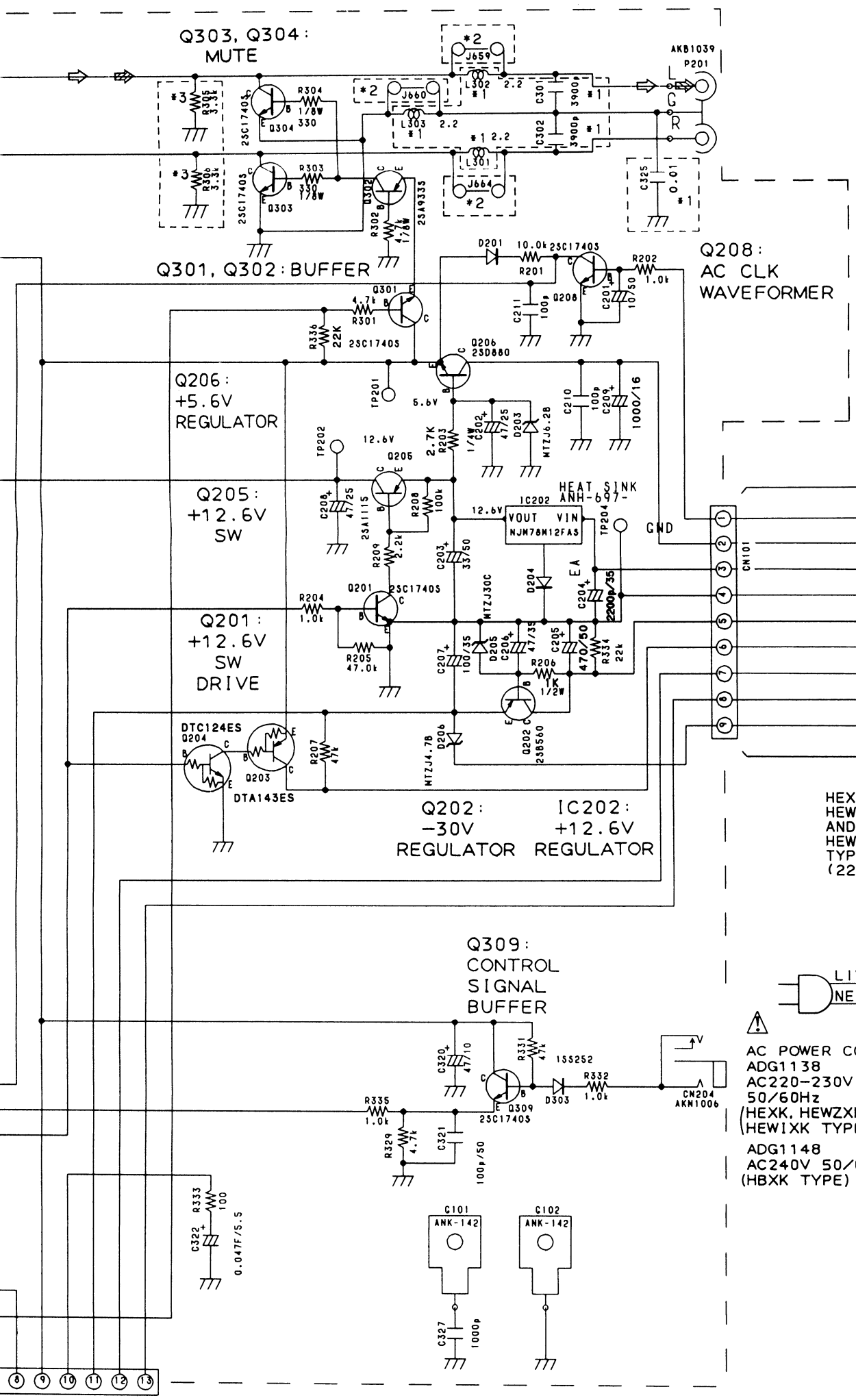
⇨ : AM Signal route

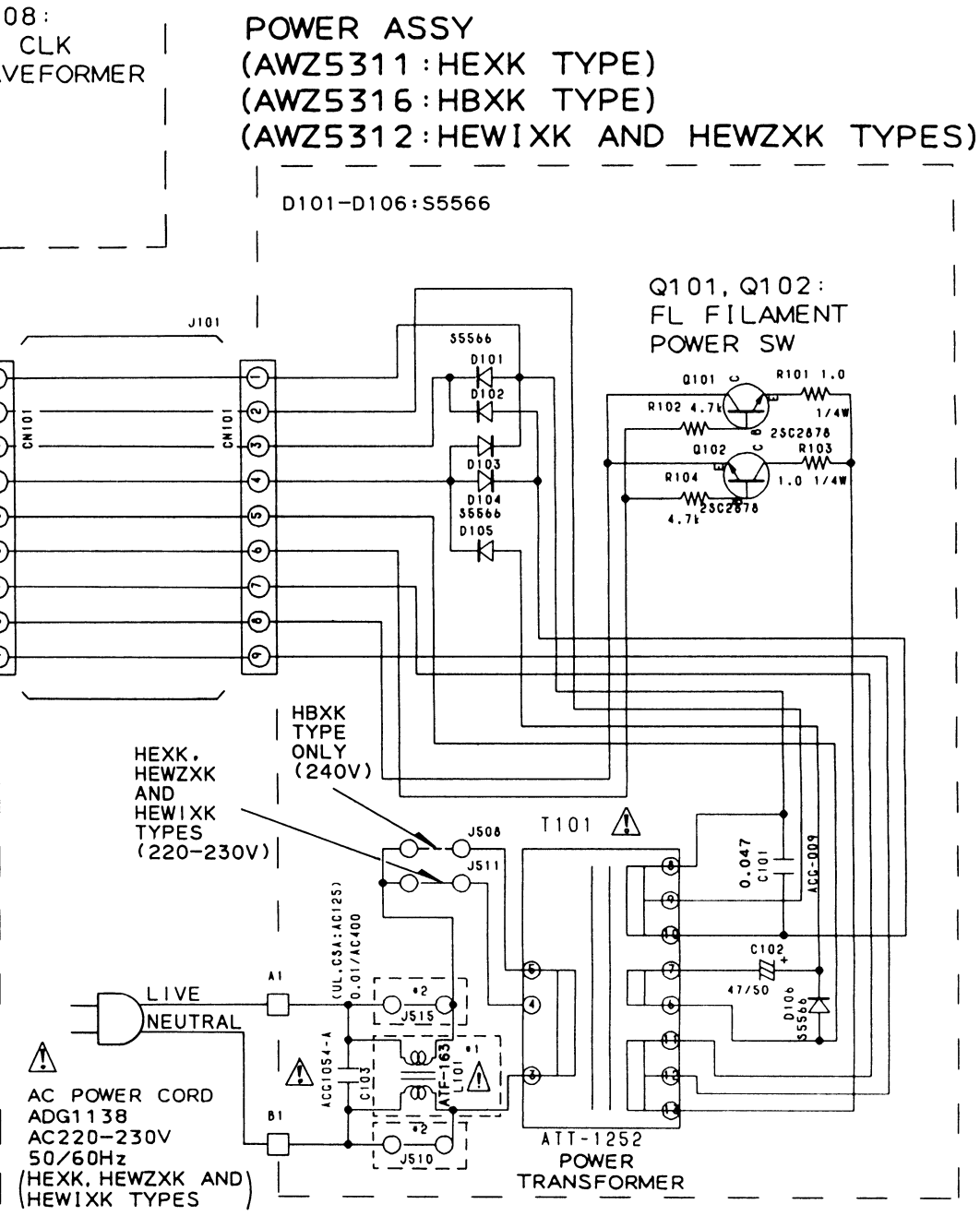
SCH-1

[*1] : HEWZXK AND HEWIXK TYPES

[*2] : HEXK AND HBXK TYPES

[*3] : HEWIXK TYPE ONLY



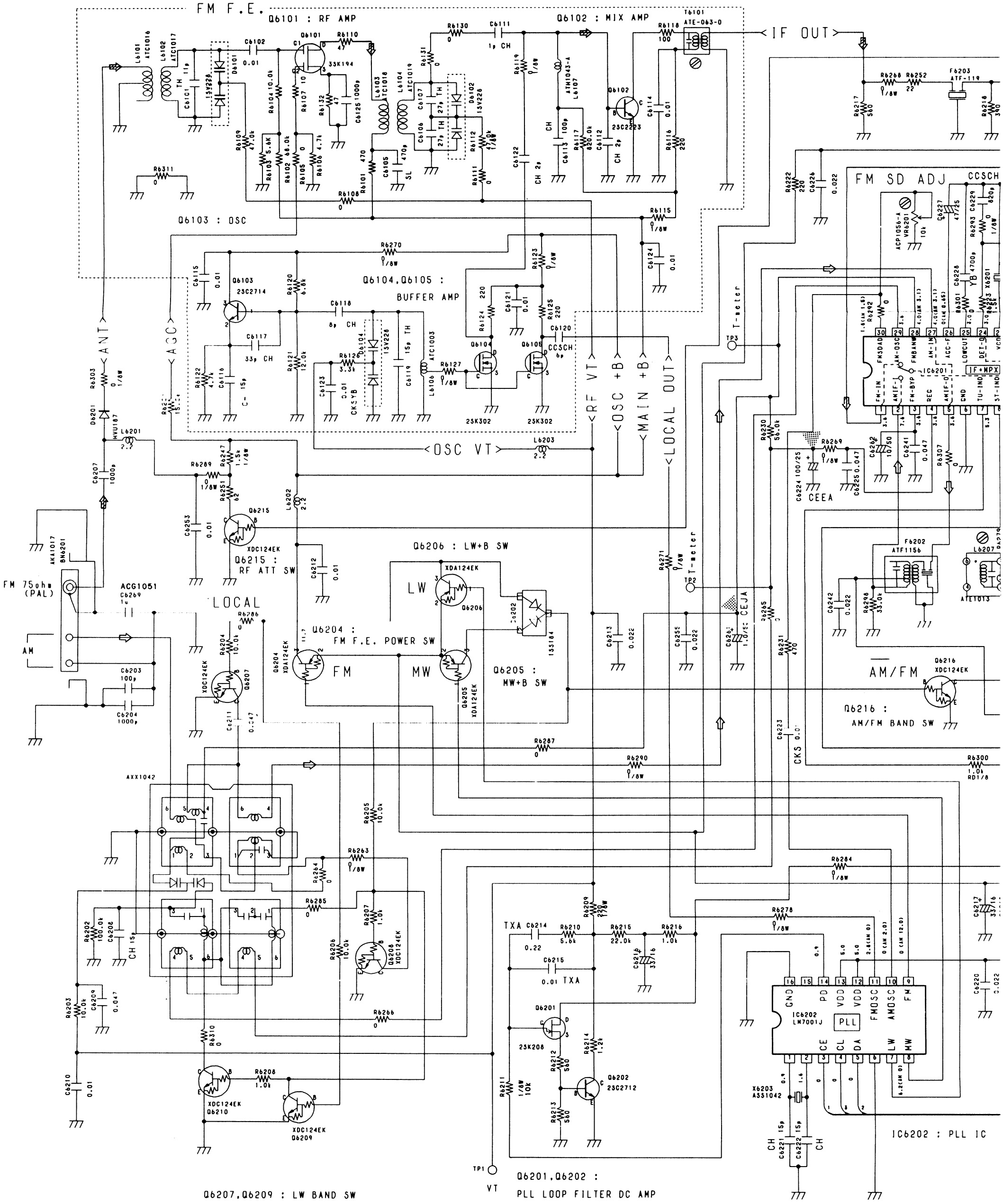


RDS ASSY, POWER ASSY

SCH-1

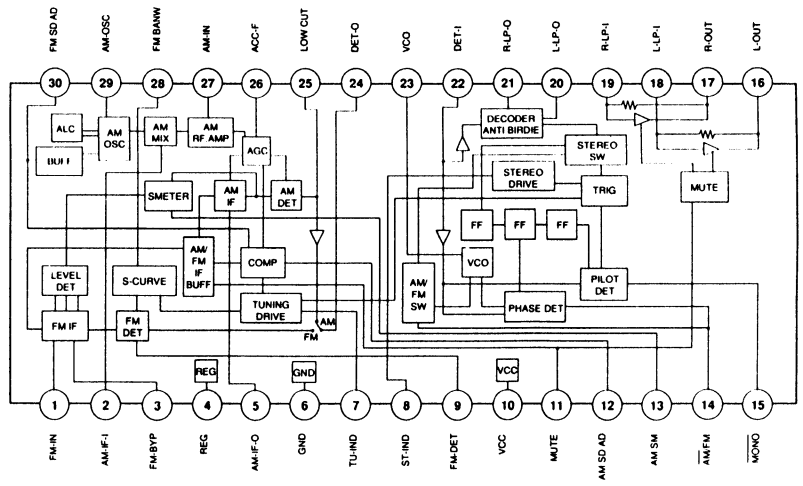
4.2 FM/AM TUNER MODULE (FOR HEXK AND HBXK TYPES)

FM/AM TUNER MODULE (AXQ3225 : HEXK AND HBXK TYPES)



SCH-2 FM/AM TUNER MODULE (FOR HEXK AND HBXK TYPES)

IC6201 (LA1836M)



Q6214 : IF AMP

IC6201 :
FM/AM IF DETECTION-
STEREO DECODER

SCH-2

RDS
LOCAL
CE
DA
CL
R CH
GND
L CH
MONO
MUTE
TUNE
+12V
+5V
STEREO

TO RDS ASSY CN203 (→SCH-1)

CN6201

C6234,C6236 : ACG1051-A
C6235 : ACG1052-A

Q6217 : FORCED MONO DRIVE

Q6203 :
RIPPLE FILTER

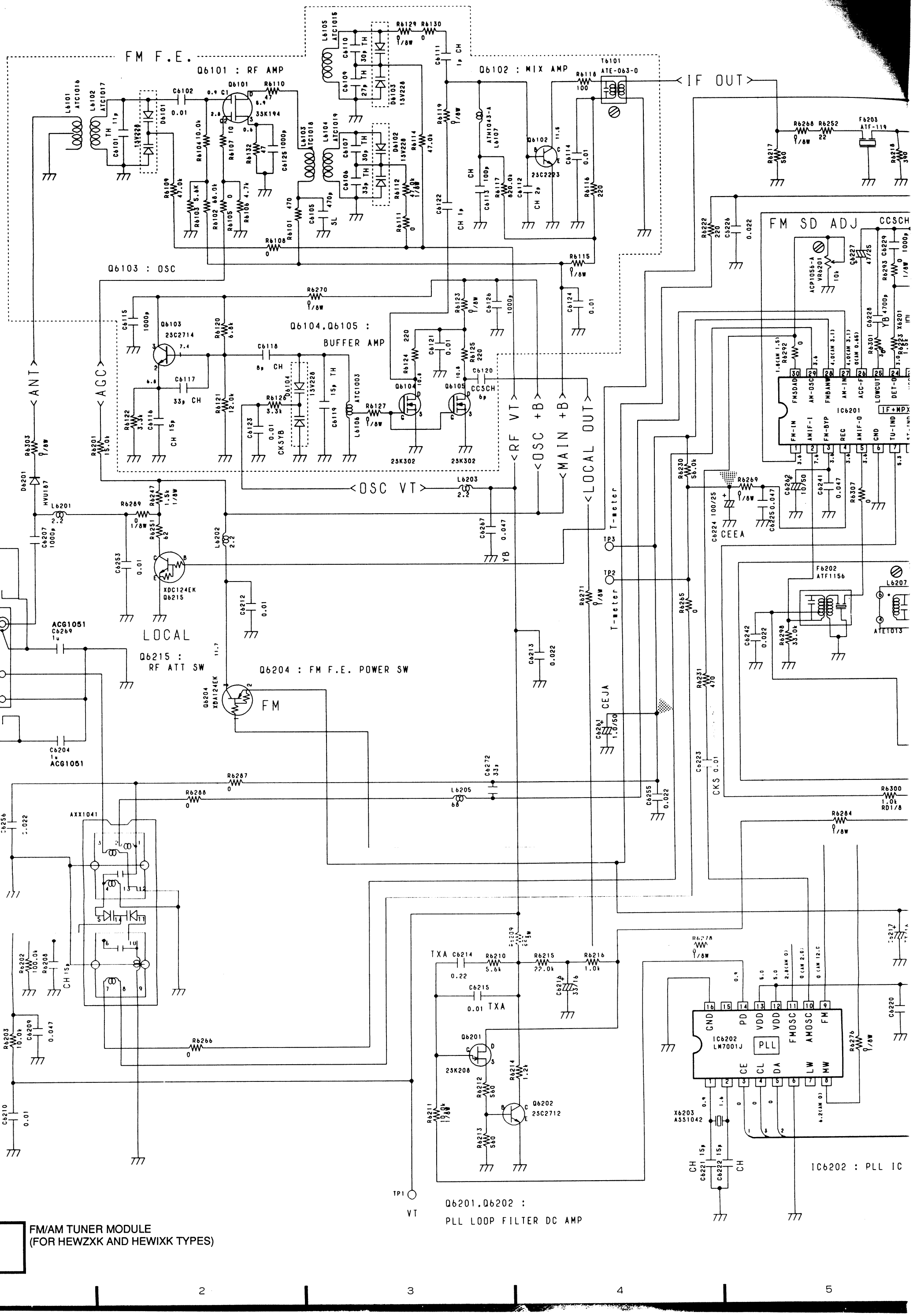
:FM signal route
:AM signal route

202 : PLL IC

FM/AM TUNER MODULE
(FOR HEXK AND HBXK TYPES)

SCH-2

FM/AM TUNER MODULE (AXQ3226 : HEWIXK AND HEWZXK TYPES)



SCH-3 FM/AM TUNER MODULE (FOR HEWZXK AND HEWIXK TYPES)

SCH-3

Q6214 : IF AMP

IC6201 :
FM/AM IF DETECTION-
STEREO DECODER

Q6218 : AMP

IC6201 IF+MPX LA1836M

Q6203 :
RIPPLE FILTER

Q6217 : FORCED MONO DRIVE

C6234,C6236 : ACG1051-A
C6235 : ACG1052-A

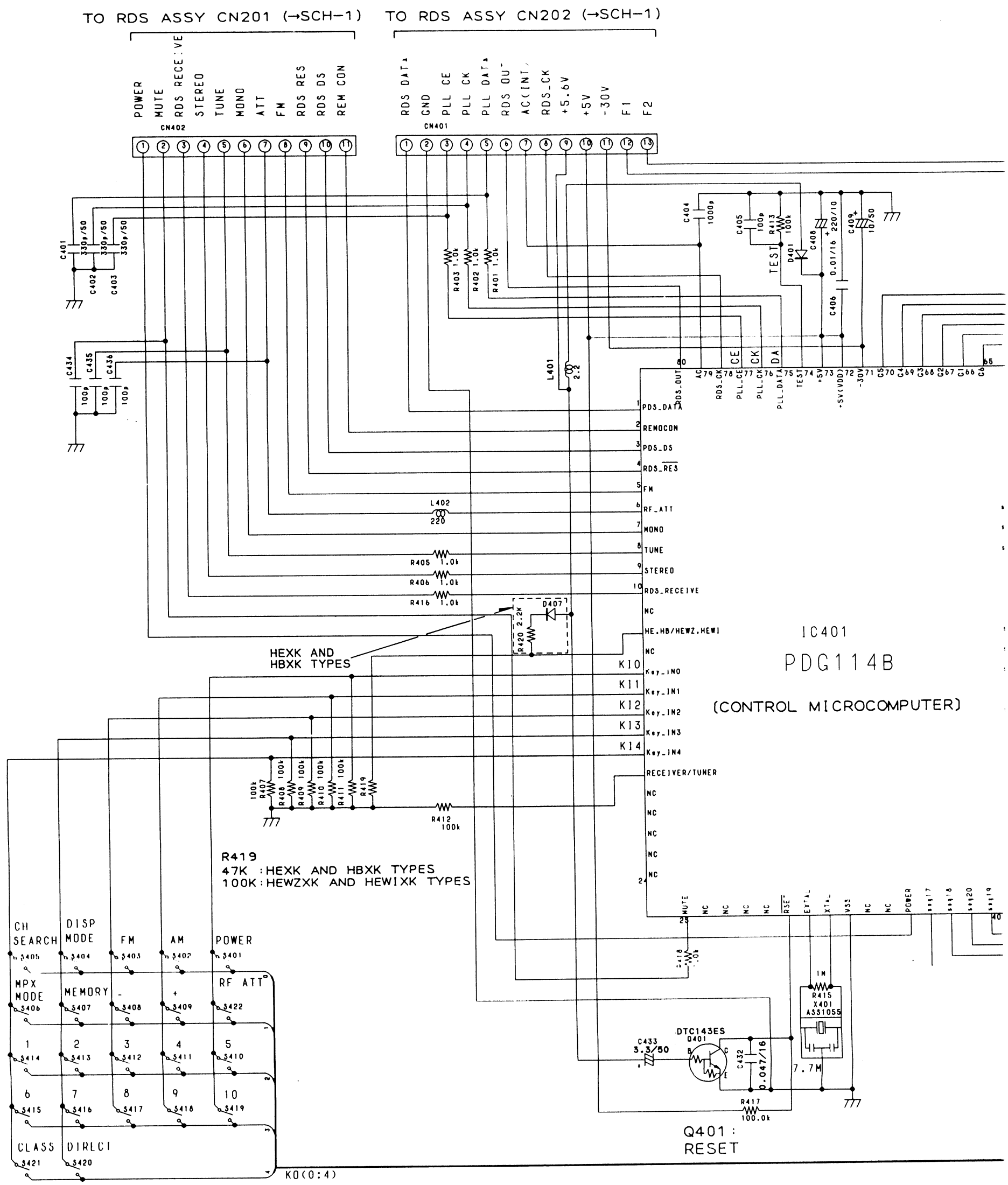
IC6202 : PLL IC

TO RDS ASSY CN203 (→SCH-1)

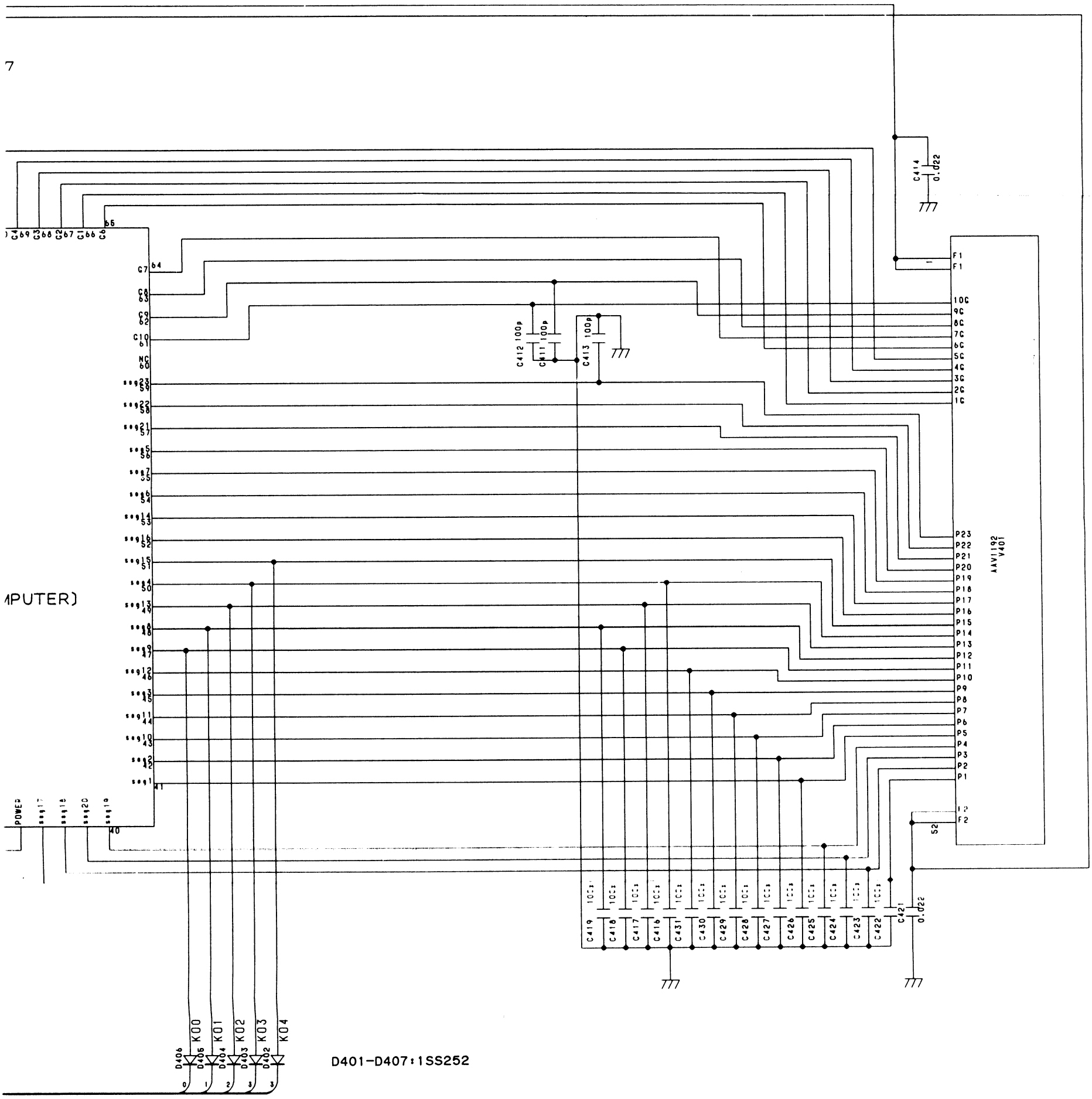
RDS
LOCAL
CE
DA
CL
R CH
GND
L CH
MONO
MUTE
TUNE
+12V
+5V
STEREO

.4 CONTROL ASSEMBLY

CONTROL ASSY(AWZ5574:HEXK AND HBXK TYPES)
(AWZ5575:HEWIXK AND HEWZXK TYPES)



SCH-4 CONTROL ASSY



CONTROL ASSY

SCH-4